



Micro Detectors



Italian Sensors Technology

COMPANY PROFILE



THE ITALIAN SENSORS TECHNOLOGY COMPANY

M.D. Micro Detectors has been designing and manufacturing a wide variety of sensors for industrial automation and logistics since 1971. Photoelectric, proximity, ultrasonic and area sensors, safety devices and encoders make up a range of products capable of fulfilling the application needs of several industrial sectors.

M.D. Micro Detectors has its seat in Modena, in the Emilia-Romagna region, which has a very high industrial development rate. In 1991 a commercial branch was opened in Barcelona (Spain), followed by another one in 2012 in Tianjin (China), where a unit/ headquarters developing and producing proximity sensor coils was also created.



Born in 1971, M.D. Micro Detectors S.p.A. has made a name for itself in the market over the years, both for its high quality standards and for its highly performant and resistant products, as well as for its numerous technical innovations. In the early years, the company has adopted the name “Diell”, which then became M.D. Micro Detectors in 2000.





Micro Detectors

Italian Sensors Technology



**MORE THAN 25
MILLION, OUR
CONSOLIDATED
TURNOVER**



**MORE THAN 70%
OF OUR TURNOVER
PRODUCED
OUTSIDE ITALY**



**MORE THAN 1.5
MILLION ITEMS
MANUFACTURED
EVERY YEAR**



**MORE THAN 30%
OF OUR TURNOVER
MADE UP OF CUSTOM
PRODUCTS**



**MORE THAN
200 EMPLOYEES**



**MORE THAN
6,400 M² BUILDING**



**MORE THAN 70, THE
COUNTRIES WHERE
WE ARE PRESENT**



Research and Development and Production are carried out in Modena as well, thus allowing the company to have total control over Processes, Technology and Quality. By applying the principles of Lean Manufacturing and vertically integrating assembly and activity support processes – all carried out in our own plant – M.D. is able to reach high levels of efficiency, and high quality and performance standards, in line with the best brands in the market.

Technology, Quality and Performance of our sensors, resulting from a long Tradition in this sector, are highlighted by a service level based on Speed and Flexibility. M.D. Micro Detectors' sensors are famous for their durability and robustness even under adverse conditions. Of great interest is also the possibility to customize products, that is, to provide specific custom solutions on the basis of the client's individual application needs.

Strong Industrial Vocation, high Technological Level, Professionalism, Expertise, Enthusiasm, Pride, Effort towards Constant Improvement and response to Professional Challenges are the keywords characterizing M.D. Style.



FINMASI GROUP: THE STRENGTH OF AN INDUSTRIAL GROUP



www.finmasigroup.com



www.cistelaier.com



www.techci.fr



www.bridgearth.de



www.hotel-executive.eu



www.exe1985.it



www.sidermed.it



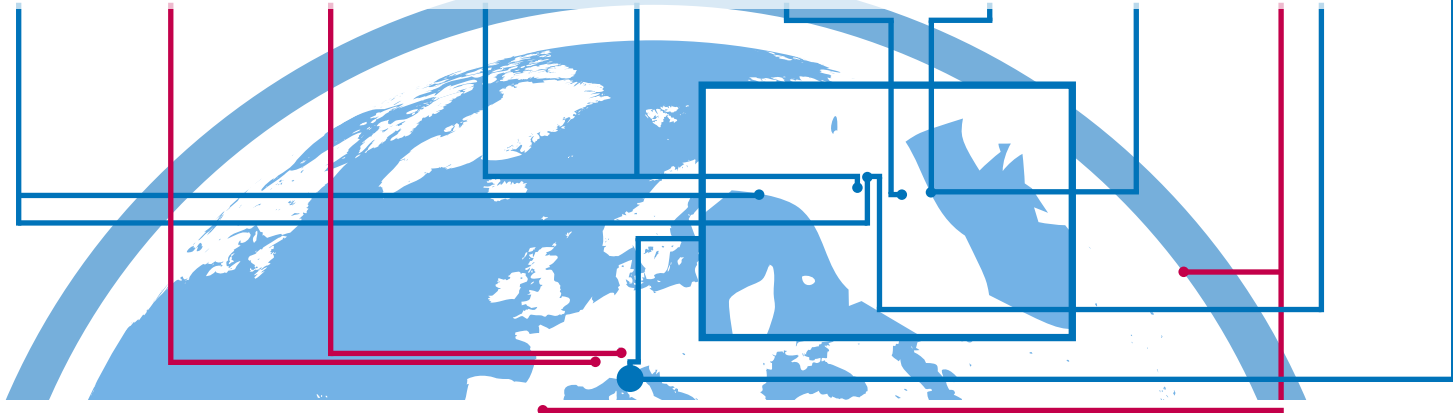
www.metalsider.it



www.sanvitale.it



www.microdetectors.com



M.D. Micro Detectors is part of Finmasi Group, an industrial group and service provider founded in 1961 by Marcello Masi. Finmasi Group employs more than 500 people, scattered across Italy, France, Spain and China. The group is composed of 11 companies operating in different sectors:

- In the **steel industry**, **Metalsider S.p.A.** e **Sidermed S.p.A.**;
- In the **sensor industry**, **M.D. Micro Detectors S.p.A.**, **Micro Detectors Ibérica S.A.U.** e **M.D. Micro Detectors (Tianjin) Co, LTD.**;
- In the **printed circuit board industry**, **Cistelaier S.p.A.**, **Techci Rhône-Alpes SA** e **Bridgearth GmbH**;
- In the **service industry**, **Sanvitale Trasporti & Spedizioni S.r.l.**, **Hotel Executive S.r.l.**, and **Exé 1985 restaurant**.

Finmasi Group has a strong industrial vocation and a long-established tradition, which is synonymous with technology and quality. A solid, ever-growing group which has been carrying out an investment plan for years, in order to achieve its strategic view, strongly focused on catering for and satisfying customers' needs. Professionalism, expertise, passion, spirit of initiative, courage and effort towards constant improvement. These are the trademarks of people working for Finmasi Group. Marcello Masi, President and founder, and his son Paolo, Vice-President, are the expression of the entrepreneurial values characterizing Finmasi Group, and of the principle of Going Concern, another essential quality and a guarantee for everyone who collaborate with our company. Marcello Masi is a real entrepreneur: with great foresight, after taking an active part in the Third Industrial Revolution, he was able to project Finmasi Group into the Fourth Industrial Revolution thanks to his ever active presence and propositional attitude.

M.D.'S QUALITY MANAGEMENT SYSTEM

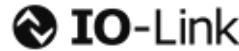


The quality system of M.D. Micro Detectors complies with the ISO 9001:2015 standard. Over the next months our quality system will achieve the following certifications:

- ISO 14001: Environmental management system
- ISO 45001: Occupational health and safety management systems

thus implementing an integrated system of Quality Management, further evidence of M.D. Micro Detectors' Merit and Reliability.

M.D. PRODUCTS' CERTIFICATIONS



QUALITY AT M.D.

Our sensors are manufactured in Italy, in our plant in the city of Modena, where we vertically integrated all assembly and support processes. Besides significantly increasing Speed and Flexibility, the implementation of this strategy enables us to have total control over Processes, Technology and Quality. Every sensor produced by M.D. Micro Detectors is tested at least twice before being dispatched to the Client.

TOP PERFORMANCES FAST DELIVERIES



QUICK
ANSWER



QUICK
PRODUCTION



QUICK
DELIVERY

WHY CHOOSING M.D. PRODUCTS?



QUALITY



TECHNOLOGY



PERFORMANCE



EASY TO
USE



RESISTANT AND
LONG-LASTING



CUSTOMIZABLE



LEAN
MANUFACTURING



VERTICAL
INTEGRATION OF
ASSEMBLY
PROCESSES



EXCELLENT
SERVICE



IN 1977
M.D. MICRO DETECTORS
LAUNCHED THE FIRST
M18 PHOTOELECTRIC
SENSOR IN THE WORLD



THE LEAN COMPANY

Since 2011, the organization of M.D. Micro Detectors has been based on the principle of Lean Thinking. The introduction of this working method has allowed our company to improve its performance constantly and steadily in all business areas. This remarkable improvement in Efficiency, Speed, Flexibility and Production Capacity is the most tangible and end evident result, from which our clients have greatly benefited. The effort towards Constant Improvement, Standardization and Simplification guide the way our people work.

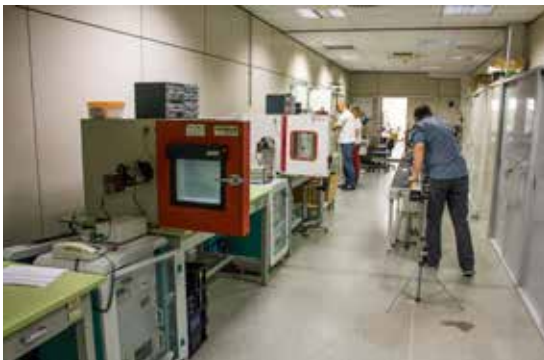
From developing new products to delivering to the Client, everything is done by our internal staff on our premises. In particular, in the Operation Area, we apply the principles of Lean Manufacturing, together with the Vertical Integration of the assembly procedures (starting with the assembly of printed circuit components), which are carried out entirely in our plant.

All that has lead to the high levels of performance which has always distinguished us and given us great market visibility.

Our production lines work by applying the typical “lean” tools: from One Piece Flow to Visual Management, from the 5 S's to the Kanban inventory-control system. The harmonious fusion between:

- Well-established manufacturing processes, result of an almost fifty-year-long Tradition;
- State-of-the-art machinery and equipment used in production;
- Long experience of our workers, organized according to the newest management techniques;
- Independence from external firms makes it possible for us to guarantee high-level Technology, Quality and Service to all of our clients.

Still today, our best introduction to those who doesn't know us is a visit to our headquarters in Modena, where anyone can see first-hand what we are and what we can do.





THE INTERNATIONAL COMPANY

M.D. Micro Detectors has always had a strong international vocation throughout its history. More than 70% of its turnover comes from abroad, with the main reference markets being Europe (particularly Germany and Spain), the United States, China and South America.



M.D. has been operating in the Spanish market since 1991 with its branch Micro Detectors Ibérica S.A.U., situated in Catalonia, in Barcelona, the beating heart of the Iberian economy. Micro Detectors Ibérica, the only sensor producing company to have an on-site sensor stock, presents itself as well-established entity in the Spanish market, thanks to a team of outstanding experts who offer a highly qualified catalogue and service with competence, quickness and great passion.



Since 2012, M.D. has been active in the Chinese market as well, with its branch M.D. Micro Detectors (Tianjin) Co. Ltd, located in Tianjin. Even the lively Chinese market of industrial automation can now take advantage of the Technology, Quality and Service which has distinguished M.D. Micro Detectors and its products from 1971 on. Moreover, in our Chinese branch we have started and fostered a department dedicated to the development and production of proximity sensors coils. The manufacturing process is organized according to the principles of Lean Manufacturing, and all coils undergo quality tests before being shipped to the client.

CYLINDRICAL
PHOTOELECTRICS

From M8 to M18 with infrared, red and laser emission.

Extremely wide range of models available: adjustable with background suppression or fixed-focus; direct diffuse, retro-reflective, polarized, beam sensors and sensors for transparent objects.

Up to 50 m sensing distance range; Vdc and Vac supply; plastic, brass or steel housing; cable or plug output.



CUBIC
PHOTOELECTRICS

From Miniaturized size to Maxi size, with red and infrared emissions.

Wide range of models available: adjustable with background suppression, direct diffuse, retro-reflective, polarized, for transparent objects and through-beam.

Up to 50 m sensing distance range, Vdc and Vac supply.

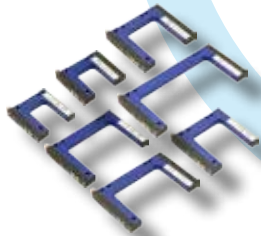


PHOTOELECTRIC SENSORS



FORKS

For object or label detection; 2 mm to 180 mm width slit detection; 30 mm to 120 mm depth slit detection; red, infrared and laser emission; adjustable.



OPTICAL FIBER
AMPLIFIERS

In different sizes: cylindrical, cubic and DIN rail-mountable; red emission; teach or trimmer adjustment; compatible with plastic or glass fibers, reaching a maximum application temperature of 250°.



FOOD

M18 cylindrical sensor, smooth or threaded, with AISI316L steel housing.

Wide range of models, inductive teach adjustment; IP69K protection class; Diversey and ECOLAB certifications.



CUBIC AND CYLINDRICAL MINIATURIZED INDUCTIVES



Cylindrical models: from \varnothing 3 mm diameter to ultrashort M8 diameter; shielded models; standard and extended distance; cable or M8 plug output.

Cubic models: 5 x 5 mm and 8 x 8 mm stainless steel housing. Completely shielded, with standard, long and extended distance.

Plastic models: compact, both shielded and unshielded, long-distance.

Cable or M8 plug exit.

CYLINDRICAL INDUCTIVES



From \varnothing 6.5 mm to M30 diameter; shielded and unshielded models; standard and extended distance; cable, M8 plug or M12 plug output.

Analogue models available.

PROXIMITY SENSORS



AC-DC INDUCTIVES



Protected against short circuit, both in AC and in DC mode.

With cable or plug output; shielded and unshielded; M8, M12, M18, M30 diameters available.

All products have a metal housing and are completely filled with resin.

HIGH-PERFORMANCE INDUCTIVES



Full metal sensors with AISI316L steel housing; from M8 to M30.

F + B application sensors in AISI316L steel.

IP69K protection degree.

CAPACITIVES



Cylindrical sensors from M18 to M30.

Cubic sensors for industrial use.

Cubic level sensors, extremely thin.

M18 CYLINDRICAL



Up to 2,200 mm sensing distance range.

Models with digital output (single or double) or analogue output (I/V) available.

Synchronization and multiplexing functions.

Plastic or AISI316L stainless steel housing.

Cable or M12 plug exit.

Models with radial emission.

Models with IO-LINK technology.

M30 CYLINDRICAL



Up to 3,500 mm sensing distance range.

Models with digital output (single or double), analogue output (I/V) or mixed output (digital + analogue) available.

Plastic or AISI316L stainless steel housing.

Cable or M12 plug output.
Models with IO-LINK technology.

ULTRASONIC SENSORS



M18 SHORT-BODY CYLINDRICAL

Up to 1,200 mm sensing distance range.

Reduced deadband.

Models with digital and analogue output (I/V).

Plastic or AISI316L housing.
Cable or M12 plug output.

Models with IO-LINK technology.



M30 LARGE FRONT CYLINDRICAL



Up to 8,000 mm sensing distance range.

Models with digital (single or double), analogue or mixed (digital + analogue) output.

Plastic or AISI316L housing.
Cable or M12 plug output.

Models with IO-LINK technology.

CUBIC THROUGH-BEAM AND FORKS



Models with 0 – 300 mm or 0 – 1,100 mm sensing distance range.

Housing with reduced dimensions.

Cable exit.

Ultrasonic fork sensors for label detection on transparent surfaces.

Dynamic Teach-in system.

Width slit detection 3 mm;
maximum switching frequency 1,500 Hz.

MEDIUM RESOLUTION SENSORS



Compact sensor with plastic housing; 6 mm to 30 mm pitch; crossed beam detection up to 90 mm height; maximum sensing distance 6 m.

ATEX models 3 GD and 2 GD available; wide range of special models.

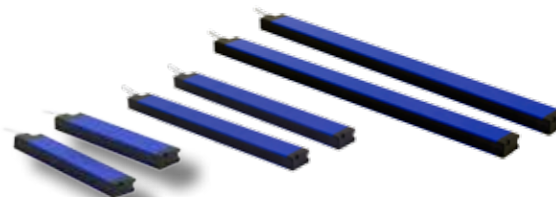
RETRO-REFLECTIVE



Aluminium housing; controlled height 70 mm; 0.3 m to 4.5 m sensing distance range; smallest detectable object 2 mm; red polarized emission; teach adjustment.

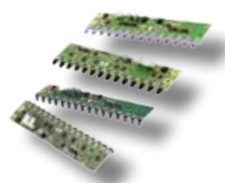
Models with IO-LINK technology.

HIGH RESOLUTION AND MEASUREMENT



Compact sensor in aluminium, height varying from 160 mm to 960 mm; crossed or parallel beams; up to 6 m operating distance; 5, 10 and 20 mm pitch; smallest detectable object 1.5 mm; digital and analogue output; teach adjustment; optical and cable synchronization.

AREA SENSORS



FOR VENDING MACHINES

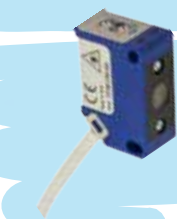
Without housing; controlled height 140 and 160 mm; up to 2 m sensing distance range; 10 mm pitch; axial or radial optics; maximum resolution 5 mm; trimmer adjustment; tropicalization available.

VIBRATION

Two models available: VBR1 with a controllable frequency range up to 400 Hz, and VBR2 with a monitorable frequency range up to 1,250 Hz. Triaxial MEMS technology makes it possible to monitor X, Y and Z axes at the same time.

Analogue output (possibility to chose between volt and ampere) and RS485 bus. AISI316L stainless steel housing.

M12 pigtail cable or plug exit.



TIME OF FLIGHT

Miniaturized sensor; infrared LASER emission with divergent beam's light spot; sensing distance range up to 600 mm; maximum frequency 80 Hz; maximum resolution 1 mm.

LUMINESCENCE



M18 and M30 cylindrical body; UV emission; trimmer or teach adjustment; coaxial optics or external lens for focalization.

INCLINATION

Models with 0,0025° resolution (operative range from 0 to 360°) or 0,0028° resolution (operative range from -90° to +90°).

Monoaxial MEMS technology.

Analogue output (possibility to choose between volt and ampere) and RS485 bus. Stainless steel housing. M12 pigtail cable or plug exit.

FOR SPECIFIC FIELDS



Photoelectric barrier for car-washes, compact cylindrical body, highly performant, synchronized.

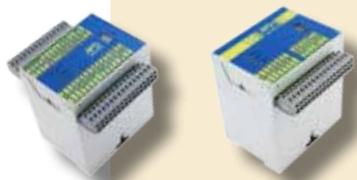
Slot sensor for edge detection, to be used on belt sanders, possibility to install a steering alert system.

... and much more...

APPLICATIVE SENSORS



SAFETY CONTROL UNIT



1 to 6 pairs of optical sensors can be connected.

DIN rail-mountable.

Models with single/ double Muting and Override functions.

Response time less than 5 ms.
2 static PNP outputs (500 mA).

CYLINDRICAL SAFETY PHOTOELECTRIC



M18 single-beam sensors with 10 m (axial optics) or 5 m (radial optics) operating distance.

M30 single-beam sensors with up to 60 m operating distance. Models with plastic or metal housing.

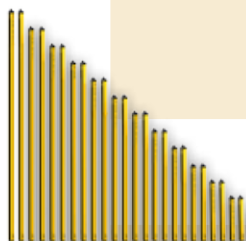
Glass optics (more resistant to dust particle accumulation and abrasion).

Models SH/TH_IA to be used in particular with the safety control unit SBCR03.

SAFETY DEVICES



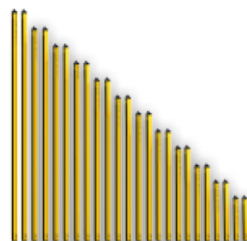
SAFETY LIGHT CURTAINS TYPE 2



With integrated control unit; protected height from 150 mm to 1,800 mm; resolution 30 or 40 mm for hand detection; 50 or 90 mm for body detection.

Models with 2, 3 or 4 beams for access control.

SAFETY LIGHT CURTAINS TYPE 4



With integrated control unit; protected height from 150 mm to 1,800 mm; resolution 14 or 20 mm for finger detection; 30 or 40 mm for hand detection; 50 or 90 mm for body detection.

Models with 2, 3 or 4 beams for access control.

SAFETY ACCESSORIES

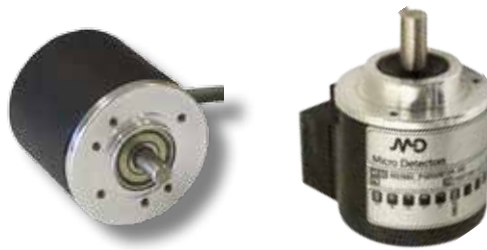


Safety relay.

Safety relay with Muting inputs.

Support brackets, beam-steering mirrors; connection cables.

INCREMENTAL SHAFT



Encoder with a diameter of 42, 56 and 63 mm; 3 channels up to 2,500 rpm; output frequency up to 220 kHz; shaft diameter of 10 mm; assembled using a clamping flange.

ENCODERS



INCREMENTAL SHAFT

Encoder with a diameter of 38, 58 and 63 mm; 3 channels up to 2,500 rpm; output frequency up to 220 kHz; hollow shaft diameter up to 10 mm; various assembly methods.



OPTICAL FIBERS

OPTICAL FIBERS



Plastic or glass optical fibers.

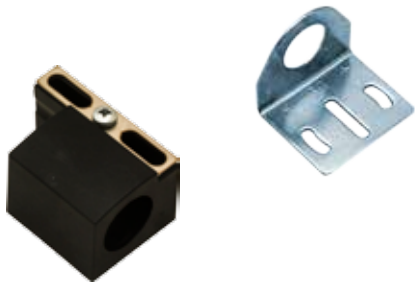
ø 0,5 to 1 mm diameter.

Direct diffuse and through-beam models.

1 to 2 m long (glass optical fibers).

Up to 5 m long (plastic optical fibers).

INSTALLATION ACCESSORIES



Supporting brackets for cylindrical and cubic sensors. AISI316L stainless steel models available for the Food&Beverage industry.

Installation accessories: shutter, optics protection, beam-steering mirrors for M12 and M18 sensors, focusing devices (with 12 mm, 25 mm, 50 mm, 100 mm focal distance) for M18 sensors.

REFLECTORS



Reflectors for polarized and non-polarized sensors.

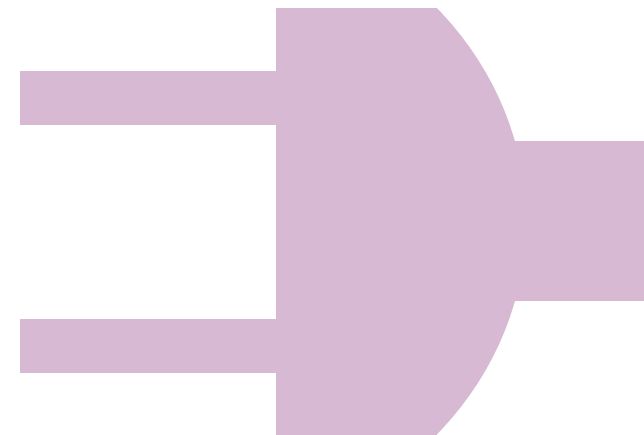
Plastic, contact paper, with rectangular and cylindrical prisms.

Laser models with micro-prisms.

CONNECTORS



Connectors without cable, connectors with PVC or PUR cable, LED connectors, shielded connectors, connectors with IP69K protection class.

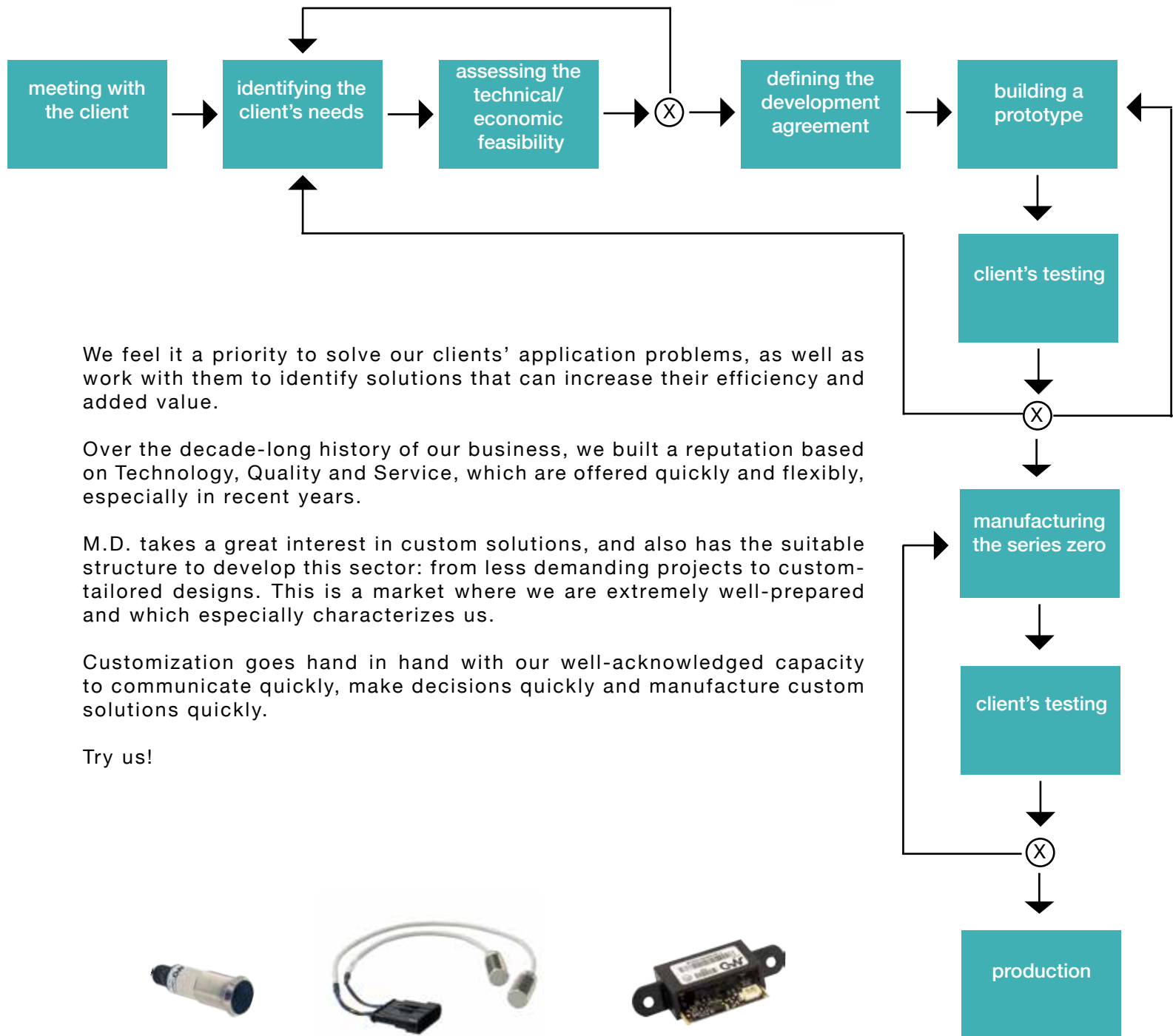


ACCESSORIES





CUSTOM PRODUCTS



We feel it a priority to solve our clients' application problems, as well as work with them to identify solutions that can increase their efficiency and added value.

Over the decade-long history of our business, we built a reputation based on Technology, Quality and Service, which are offered quickly and flexibly, especially in recent years.

M.D. takes a great interest in custom solutions, and also has the suitable structure to develop this sector: from less demanding projects to custom-tailored designs. This is a market where we are extremely well-prepared and which especially characterizes us.

Customization goes hand in hand with our well-acknowledged capacity to communicate quickly, make decisions quickly and manufacture custom solutions quickly.

Try us!





Marcello Masi and **Paolo Masi**
President and Vice President
of M.D. Micro Detectors
and Finmasi Group

M.D. TEAM

M.D. Micro Detectors is a company with a clear-cut identity and a strong sense of belonging. We call it “M.D. Style”, and this is what it means to us:

“With pride we say that this is M.D. Style: people for which work is a pleasure and a great passion, even more than a need or a duty. A never-ending challenge, a means for achieving self-realization and creating something useful for everyone, both inside and outside our company. People who do not undergo challenges and hardships, but rather face them with a rush of adrenaline.

This is M.D. Style: Team Spirit, Professionalism, Quality, Boldness, Spirit of Initiative, Quantity. Always, no matter what. Without cutting back on anything. Each one of us has to be a living example of this business attitude, every minute of every day. Each one of us has to be always on the front line, ahead of everyone and side-by-side with many others who do this daily.

This is M.D. Style: be bold, proud and satisfied with our work and with the results we achieved, considering at the same time that what has been done is nothing, and that everything is still to be done. Always future-oriented, fearless, taking a positive and constructive approach.”

We want to work so that our children can inherit from us a richer heritage than the one our parents and grandparents left us, from all points of view.

We are M.D. Micro Detectors: a team running on a unique fuel. Inexhaustible, since forever.





Micro Detectors

Italian Sensors Technology

M.D. Micro Detectors S.p.A.
Strada S. Caterina, 235
41122 Modena - Italy
tel. + 39 059 420411
fax + 39 059 253973
info@microdetectors.com
www.microdetectors.com

Micro Detectors Ibérica S.A.U.
c/. Antic Camí Ral de València, 38
08860 - Castelldefels (Barcelona) - Spain
Tel.: +34 93 448 66 30
Fax: + 34 93 645 28 15
info@microdetectors.es
www.microdetectors.es

M.D. Micro Detectors (Tianjin) Co, LTD.
XEDA International Industry
area B2-3 Xiqing District
300385 - Tianjin (China)
Tel.: +86 022 23471915
Fax: +86 022 23471913
info@microdetectors.com
www.microdetectors.com

ENGLISH ED. 01/2017
CAT7E001781801